

REMARKS

Applicants appreciate the examination provided in the final Office Action mailed May 30, 2008 ("Final Action"), and more particularly, the indication that Claims 20-38 are allowed and that Claims 17-18 recite patentable subject matter. Applicants respectfully request reconsideration and withdrawal of the rejections of Claims 1-16, 19 and 39-43 for at least the reasons discussed below.

Independent Claim 1 is patentable

Independent Claim 1 stands rejected as allegedly obvious based on a combination of U.S. Patent No. 5,300,936 to Izadian ("Izadian") and U.S. Patent No. 6,459,916 to Suguro ("Suguro"). Final Action, p. 2. The Final Action alleges that Izadian teaches all of the recitations of Claim 1 except "wherein the monopole (22) and the conductor loop (28) are configured to be coupled to a common feed-point." Final Action, p. 2. The Final Action alleges that the missing teachings are provided by Suguro, stating:

Suguro discloses in figure 5, a signal synthesizer (32) is connected to a radio communication section (31) and both antennas (40 and 41) have a different main beam radiating direction, but have the same operating frequency band, col. 4, lines 35-41, therefore, the both antenna are coupled to the signal synthesizer (32) to the radio communication (31) define as the common feed point.

Final Action, p. 2. The Final Action further states "[i]t would have been obvious . . . to employ the radio communication section (31) disclosed in the Reference of Suguro in the multiple antenna of Izadian to achieve the claimed invention . . .," with the alleged motivation for such a combination being "to combine the both antenna to operating the same frequency." Final Action, p. 3.

Respectfully, this reasoning is erroneous for several reasons. Referring to Figs. 1, Izadian shows an antenna assembly 20 that includes a rod radiator 22, a planar radiator 24 and a loop radiator 26. As is shown in Fig. 2, the rod radiator 22, the planar radiator 24 and the loop radiator 24 are configured to be connected to respective separate circuits that operate at substantially different frequencies. In particular, the rod radiator 22 is configured to be coupled via a first coaxial connector 96 to a diplexer 98 that serves a phone 110 and a radio 102. The planar radiator 24 is configured to be connected via a second coaxial connector 84

to a GPS circuit 86. The loop radiator 26 is configured to be connected via a third coaxial connector 92 to a keyless entry system 94. As explained in column 1, lines 22-51, these systems - GPS, telephone/radio, and keyless entry - operate at substantially different respective frequencies. Therefore, contrary to the assertion of the Final Action, there is no basis for having the rod radiator 22, the planar radiator 24 and the loop radiator 26 shown in Izadian to operate at the same frequency because *Izadian expressly teaches away from such same-frequency operation*. Izadian teaches away from "wherein the monopole and the conductor loop are configured to be coupled to a common feedpoint," as recited in Claim 1.

Moreover, Suguro does not teach a common feedpoint for the types of antennas shown in Izadian. In Suguro, the antenna 40 connected to the signal synthesizer 32 is a flat microstrip antenna formed on a dielectric sheet that serves as a ground plane and the antenna 14 connected to the signal synthesizer 32 is a helical antenna that is physically spaced apart from the flat antenna 40. *See* Suguro, Fig. 4; column 4, lines 24-63. Thus, Suguro describes use of common connection for a different combination of antennas (patch and helical) than the types of antennas (rod, loop and planar) shown in Izadian. Therefore, Suguro provides no evidence of a motivation to couple the types of antennas shown in Izadian to a common feedpoint.

In light of the foregoing, the Final Action fails to provide a rational basis for combining Izadian and Suguro to produce the recitations of Claim 1. For at least these reasons, Applicants submit that Claim 1 is patentable and that the rejection thereof is erroneous and should be withdrawn.

Independent Claim 16 is patentable

Claim 16 stands rejected as allegedly obvious based on Izadian. Claim 16 recites "a monopole comprising a substantially linear conductor that extends substantially perpendicular to the edge of the ground plane *from a coupling point at a corner of the rectangular conductor loop at the edge of the ground plane*." As discussed above, Izadian teaches no coupling between a monopole and a conductor loop, much less a coupling point at a particular feature of a conductor loop. Accordingly, Izadian simply does not teach or suggest "a monopole comprising a substantially linear conductor that extends substantially

perpendicular to the edge of the ground plane from a coupling point at a corner of the rectangular conductor loop at the edge of the ground plane." While the Final Action concedes that Izadian does not disclose "a coupling point at the corner of the rectangular conductor loop" (Final Action p. 6), the Final Action provides no evidence from the prior art as to why this type of connection of the monopole would be obvious other than a conclusory assertion that such recitations would have been obvious "upon a particular application or environment of use." Final Action, p. 7.

Respectfully, this is not an appropriate basis for an obviousness rejection. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements." *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007). "Impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." M.P.E.P. 2142. Applicants submit that the basis presented in support of the rejection of Claim 16 does not meet these requirements, as it is merely a conclusory statement without support of evidence from the prior art. Accordingly, Applicants submit that the rejection of Claim 16 is erroneous. Izadian does not disclose or suggest the recitations of Claim 16 and, for at least these reasons, Claim 16 is patentable.

Independent Claim 39 is patentable

Claim 39 stands rejected as allegedly obvious based on a combination of Suguro and U.S. Patent No. 6,239,755 to Klemens et al. ("Klemens"). Final Action, p. 7. The Final Action alleges that Suguro teaches "commonly fed conductor loop (2) and monopole (14) and helical elements (see figure 4)." Final Action, p. 7. As discussed above, Suguro shows a flat antenna 40 including a patch-like conductor 2, which may be "substantially square" (see Suguro, column 4, lines 54 and 55) or a "triangular, pentagonal or circuit microstrip" (see Suguro, column 5, lines 25-28). There is no teaching or suggestion in Suguro that the item 2 is a "conductor loop." In addition, Suguro does not show a *monopole* sharing a common feed with any other type of antenna. Accordingly, Suguro does not provide the teachings alleged in the Final Action, *i.e.*, Suguro does not teach "commonly fed conductor loop, monopole and helical elements," as recited in Claim 39. As Klemens does not provide such teachings, the

cited combination of Suguro and Klemens does not disclose or suggest the recitations of Claim 39. For at least these reasons, Applicants submit that Claim 39 is patentable.

The dependent claims are patentable

Applicants submit that dependent Claims 2-15, 17-19 and 40-43 are patentable at least by virtue of the patentability of the respective ones of independent Claims 1, 16 and 19 from which they depend. Applicants further submit that several of these dependent claims are separately patentable.

For example, Claim 6, which stands rejected as allegedly obvious based on Izadian and Suguro (Final Action, p. 2), recites "wherein the monopole is substantially parallel to the conductor loop." The Final Action concedes that the references do not disclose these recitations, but asserts that such an arrangement would have been obvious "since it is known and well suited for the designed use." Final Action, p. 3. As with the rejection of Claim 16 discussed above, the Final Action fails to provide any evidentiary basis for this conclusory assertion, *e.g.*, there is no evidence cited for the proposition that these recitations are "known" and "well suited for the designed use." Accordingly, Applicants respectfully submit that the rejection of Claim 6 is erroneous and should be withdrawn for at least these additional reasons.

Claim 7, which also stands rejected as allegedly obvious based on Izadian and Suguro (Final Action, p. 2), recites "wherein the monopole is coupled to the conductor loop at a corner thereof." As with the rejection of Claim 6, the Final Action concedes that the references do not show such a coupling, but again simply asserts that such a coupling would have been obvious "since it is known and well suited for the designed use." Final Action, p. 4. Along lines discussed above with reference to Claim 6, the Final Action provides no evidentiary basis for concluding this subject matter is "known" or "well-suited for the designed use." Accordingly, Applicants submit the rejection of Claim 7 is erroneous and should be withdrawn for at least these additional reasons.

The rejection of Claim 9 is erroneous for at least similar reasons. In particular, the Final Action concedes that the cited references do not disclose "wherein the conductor loop is positioned adjacent an edge of the ground plane, and wherein the monopole extends off the

edge of the ground plane," but asserts, without supporting evidence from the prior art, that such recitations are obvious because they represent obvious modifications for "a particular application or environment of use." Final Action, p. 4. This is not an appropriate basis for an obviousness rejection for reasons discussed above. For at least these additional reasons, Applicants submit that the rejection of Claim 9 is erroneous and should be withdrawn.

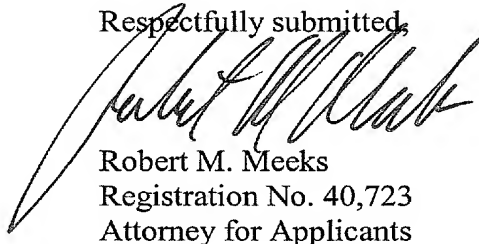
Claim 12 recites "a helical element arranged coaxial with the monopole and configured to be coupled to the common feedpoint." The Final Action concedes that Izadian does not disclose these recitations, but asserts that Suguro "discloses in figure 1, the helical element (14) arranged coaxial." Final Action, p. 5. Suguro simply does not disclose or suggest "helical element arranged *coaxial with the monopole*," because Suguro does not disclose or suggest a monopole. For at least these additional reasons, the rejection of Claim 12 is erroneous and should be withdrawn. The rejection of Claim 19 is erroneous for at least similar reasons and, for at least these additional reasons, should also be withdrawn.

Finally, while the Office Action Summary indicates rejection of Claims 14, 15 and 43, the Final Action provides no basis for rejections of Claims 14, 15 and 43. Applicants submit that these claims are each separately patentable.

Conclusion

For at least the foregoing reasons, Applicants submit that all of the claims are in condition for allowance. Applicants, therefore, request allowance of the claims and passing of the application to issue in due course. Applicants encourage the examiner to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Robert M. Meeks", is written over the typed name and title.

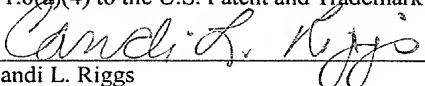
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